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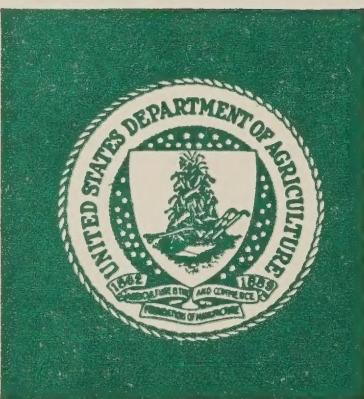
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China's Agricultural Statistics and Planning

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China's Agricultural Statistics and Planning



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CHINA'S AGRICULTURAL STATISTICS AND PLANNING / +c

by

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All comments, opinions, and recommendations in this report are those of the team members and not necessarily those of the sponsoring institutions. "The study tour was jointly sponsored by the USDA Office of International Cooperation and Development, and the Ministry of Agriculture and the State Statistical Bureau of the People's Republic of China."



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## Chapter I

### EXECUTIVE SUMMARY

The Office of International Cooperation and Development, United States Department of Agriculture sponsored a three-member team to study China's agricultural statistics. The team was comprised of Missouri State Statistician, Donald M. Bay and economists Dr. Milton Erickson and Dr. T. Roy Bogle. They were guests of the Ministry of Agriculture in China, April 27 through May 22, 1981. (Bay previously visited China in the fall of 1980 as a member of Dr. Howard Hjort's delegation in agricultural statistics and economics.) The Agriculture Statistics and Economics Team met with the State Statistical Bureau (SSB) and Ministry of Agriculture personnel who are responsible for agricultural statistics and government planning for collective and state farms at the state, provincial, prefecture, county, commune, brigade, team and state farm levels. This is a report of the Statistics-Economics Team's impressions of the current agricultural statistics and collective and state farm planning work in China.

The Statistics-Economics Team found the major emphasis is on comprehensive (complete enumeration) surveys in the collection of agricultural statistics. The surveys are well-coordinated between the SSB and the Ministry of Agriculture at all levels. This provides a timely flow of information from the grassroots through the central (state) level. The comprehensive surveys are tabulated at six levels with most levels responsible for the summarization of eight to twenty reports, with an average of thirteen. The decentralization of the responsibility for summarization makes it possible to obtain national totals within a few weeks.

Detailed instructions and definitions are provided to all levels with standardized check forms to insure that each form is complete. Although it might appear inefficient to receive reports frequently during the year from over five million reporting units, these reports are used extensively at the brigade, commune, state farm, county and provincial levels for planning management and income distribution. The Statistics-Economics Team found that all levels expressed confidence in the accuracy of these reports. The team believes the comprehensive surveys provide a valuable contribution to the information system on China's agriculture.

The team also found some non-comprehensive (sample) surveys being used to meet various special data requirements. These surveys in most localities have been reintroduced only during the past two years and are not heavily relied upon at this time. The non-comprehensive surveys vary considerably in different areas but are generally designed to provide forecasts of crop production prior to harvest, crop-cutting yield data immediately before harvest and individual household economic data that includes private plot crop production and family livestock production. They are also designed to provide a check on the accuracy of their comprehensive surveys. The Chinese use both representative and systematic random-sampling techniques. The Statistics-Economics Team recommends that a shift to probability sampling rather than representative sampling be used to eliminate selection bias. The team also recommends regression and time series analysis of the non-comprehensive survey results be instituted at the provincial



and State level.

Introduction of computers would expand tremendously the use of both comprehensive and non-comprehensive survey data as a management tool at all levels.

The need for timely summaries at the brigade, commune, county and provincial levels, as well as at the State level, requires that automation be implemented at the commune, county, provincial and State levels to avoid continuation of considerable manual processing to meet local needs.

The recently implemented readjustment policies for Chinese agriculture, including the new responsibility system, significantly affect the planning and management of Chinese agriculture. One aspect of these policies is an emphasis on the development of rural industry. This is adding employment opportunities in rural areas and helping to absorb agricultural labor displaced by agricultural mechanization. Chinese officials emphasized there would be an indeterminate period of experimentation with the new readjustment policies.

The responsibility system aims to give the peasants greater incentives to improve output and efficiency. This system counters the "evenness" approach during the Cultural Revolution. While State planning continues to assign quotas and tasks through the production team level, the responsibility system also encourages response to assigned quotas and tasks from the production team level. This permits each production team to propose how they will meet the quotas and tasks by providing them the opportunity for input into cropping patterns, crop practices and cost cutting (yield-improvement methods). The production teams are encouraged to set targets beyond the quotas with an opportunity to share in the returns from such additional production. The teams are also encouraged to operate sidelines such as livestock or nongrain cash crops. The incentives used to increase sideline production include sharing in the additional production or earning additional work points from these tasks. Another incentive to increase production is a policy which was announced in May 1981 that will permit private plot allocation to make up as much as 15 percent of the land area, compared to the current 5 to 7 percent.

The Statistics and Economics Team observed that implementations of the responsibility system policies had begun at the production team, production brigade and people commune levels, as well as on the state farms. The team also observed variations of the policies, which indicate that officials are given some degree of latitude in the implementation of the policies at all levels.

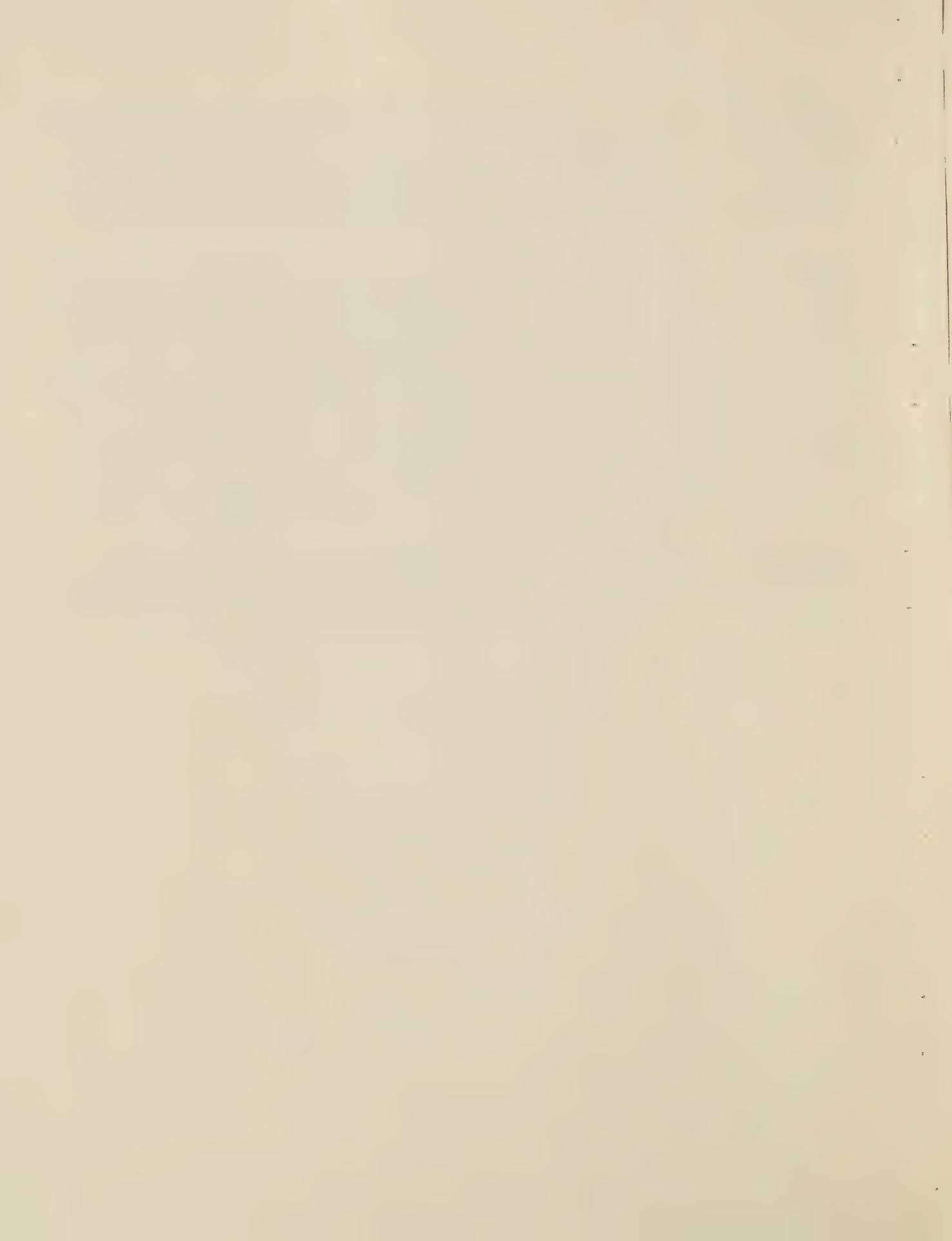
The Statistics-Economics Team feels the readjustment policies are a very positive step at the present stage of agricultural development in China. The team believes a key factor will be the ability of Chinese planners to obtain a balance between agricultural mechanization, the growth of rural industry and sideline enterprises to avoid unemployment in rural areas. Lack of capital investments for developing industry will continue to be a serious problem unless the State provides more resources in the rural areas. An improved transportation and communication system will also be necessary to fully develop industries, particularly in remote areas. Decentralization of the industrial plants limits the opportunity to gain economics of size, and as the Chinese concentrate on developing industrial capacity in rural areas, problems of unemployment in urban areas could



increase. A number of the factories being established at the commune level are in direct competition with urban factories. A rapid expansion in consumer demand through increased disposable income, as well as expanding world markets for Chinese manufactured products, will be a key to the success of expanding industry into rural areas to absorb displaced agricultural workers. The Chinese believe rural industrial development is the principal means to improve per capita income among the majority of their population.

The Statistics-Economics Team was briefed on extension programs for agricultural education and research. Future extension programs will have a significant effect on the economic development of China's agriculture and contribute substantially to the planning process on land utilization. Extension work as well as most agricultural education was virtually eliminated during the early part of the Cultural Revolution. Since the end of the Cultural Revolution, renewed emphasis has been placed on agricultural research, education and extension. This is now evident at every administrative level: province, prefecture, county, commune, brigade and team. Each level also has agricultural and technical extension stations including livestock and veterinary stations at most levels. The more advanced production brigades have science research teams or technical extension workers. Overall, extension priority is given to agricultural technical work, disease prevention and breeding of new crop varieties.

Agricultural education programs are communicated in various ways, including demonstrations, tours, workshops, seminars, educational bulletins (pamphlets), announcements over public address speakers located throughout living and working areas, field visits and personal visits by technicians.



## Chapter II

### INTRODUCTION

#### Background of U.S.-China Relations and Agricultural Exchanges

Following the Cultural Revolution, Chinese planners have begun to focus on modernization of their economy. They believe progress in science and technology is a key in the modernization process. To parallel domestic Chinese efforts in this regard, the Chinese have promoted science and technology exchanges, particularly with the United States.

The basis for current U.S.-China exchanges is an agreement on scientific and technological cooperation signed by President Jimmy Carter and Vice Premier Deng Xiaoping in January 1979. A U.S.-PRC Joint Commission was established to cover all areas that relate to science and technology, including agriculture. During the first Joint Commission meeting held in Beijing in January 1980, a permanent Working Group on Agriculture was approved. An agreement was reached for an exchange of reciprocal teams. Individual visits that began in 1980 under the co-leadership of the U.S. Department of Agriculture and the PRC State Agricultural Commission also were agreed upon.

As a result of an understanding reached by Secretary of Agriculture Bob Bergland, during a visit to China in November 1978, five agricultural team exchanges preceded the Joint Commission agreement. A vigorous agricultural exchange program between the two countries now has been active for over three years.

The Team 2B exchange in statistics and economics is part of the current series of exchanges. Other exchanges in the series include: agricultural education, crop germ plasma, biological pest control, agricultural engineering, forestry, soil and water conservation, nutrition and food policy, animal health, grain storage and agricultural research.

#### Background Information

Team 2B visited China to learn about the policy and statistical information flow between the highest levels of the central government and the individual production teams on peoples communes and management of state farms. The Team also learned about production-related goals and decisions at the various levels and about the assembly of statistical and policy-related information that contributes to the decision-making process for agriculture in China.

The information gained by the team is expected to add to the resources of knowledge on Chinese agriculture in the United States, to improve the basis for evaluative feedback to the Chinese people, to help promote general understanding of agriculture between the people of the United States and China and to enhance the friendly relationship between the people of the two nations.



### Team Members

Donald M. Bay, leader; state statistician of the Missouri Crop and Livestock Reporting Service. Bay has previous foreign agriculture experience in Thailand and was a member of the first U.S. Economic and Statistics delegation headed by Howard W. Hjort that visited China for 20 days in October 1980.

Milton H. Erickson; agricultural economist and chief of the Crops Branch, National Economics Division, Economics and Statistics Service, United States Department of Agriculture.

T. Roy Bogle; professor of agricultural economics and Assistant Director of the Cooperative Extension Service, University of Illinois.

### Team Assignment

Team 2B originally was scheduled to be sponsored by the Ministry of Land Reclamation as Team 2A. The purpose of the visit under the Ministry of Land Reclamation sponsorship was to make an intensive study of the structure and operation of a State Farm in the vicinity of Harbin, Heilongjiang Province. Two weeks prior to departure, the U.S. Department of Agriculture was notified that the Ministry of Land Reclamation would be unable to host Team 2A; however, at the same time, the Ministry of Agriculture indicated a willingness to host the team if it could be combined with Team 2B. Team 2B was to be a second statistics/economics team scheduled to visit China in the fall of 1981. A decision was made to send Team 2A to China on the originally scheduled date and to combine the objectives of 2A and 2B, thereby cancelling the fall 1981 trip of Team 2B. Team 2A redesignated as Team 2B, departed as scheduled and arrived in Beijing, China, on April 27, 1981.

The change in plans resulted in hurried planning for both China and the U.S. team. Final itinerary arrangements were made in Beijing after the team arrived. In general, the itinerary was arranged so that the team could be briefed by both the Ministry of Agriculture and the State Statistical Bureau officials at the central level and at the province, prefecture and county levels. In addition, arrangements were made for the team to visit peoples communes and state farms, to be briefed by management officials and statistical workers and to directly observe agricultural operations. The Chinese hosts were able to arrange an excellent itinerary to meet the purposes of Team 2B on very short notice.

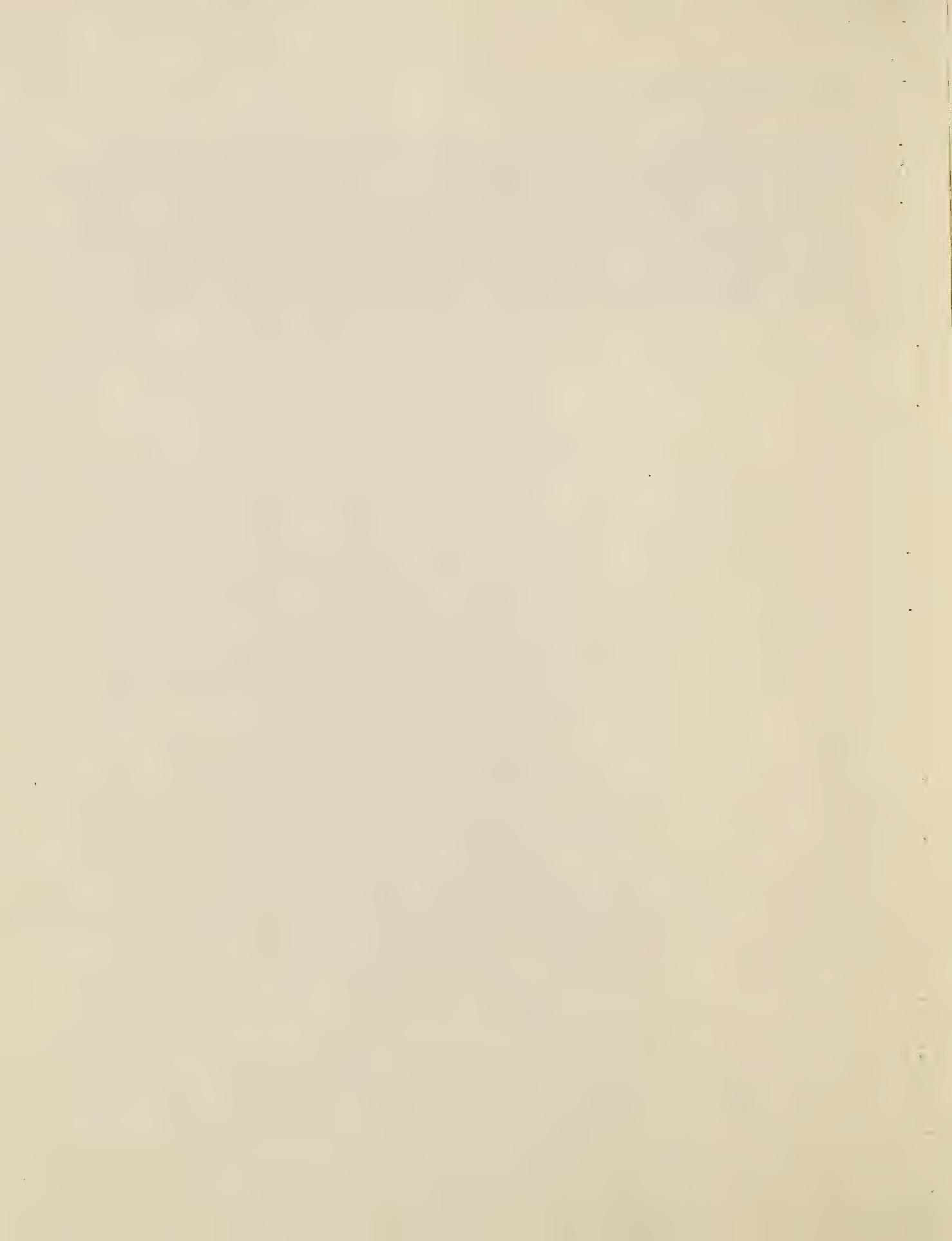
### What Took Place

The information obtained by Team 2B through briefings and observations will be summarized in different sections. They are as follows: the statistical work in China, Chinese policy, planning decisions and management and China's ex-



tension and education programs.

Appendix A presents a detailed list of the briefings and visits attended by the Team 2B delegation. When the delegation visited state farms and the peoples communes, the receiving officials briefed the delegation on the statistics associated with their unit. It was not the purpose of the delegation to gather this kind of information; however, these statistics may be of general interest. They are therefore given for each farm or commune in Appendix B. It must be noted that these communes and state farms are not necessarily typical or average. They were selected by the Chinese hosts, and it is of the team's judgement that they were above average in income-per-worker and productivity.



## Chapter III

### CHINA'S AGRICULTURE STATISTICS

China's current agricultural statistics program is developed at the State level by the State Statistical Bureau, which consults with the Ministry of Agriculture and other ministries that collect data in agriculture, forestry, aquaculture, etc.

#### INTRODUCTION

The Chinese use both comprehensive (complete enumeration) and non-comprehensive (sample) surveys. Comprehensive surveys are the principal method for collecting agricultural statistics. The collective farm reporting forms for each survey are mailed from the Province to the Production Brigade, which then distributes them to each Production Team. Production teams are generally the basic reporting units. After completion, the forms go to the respective Production Brigade where they are reviewed and combined with Brigade level enterprises, and then, they are summarized with Brigade level totals. The Brigade reports are sent to the respective Communes where they are again reviewed and combined with Commune level enterprises, and then summarized with Commune level totals. The Commune reports are then submitted to their respective County where they are reviewed and summarized and from there, the County totals are sent to the Municipality or Prefecture where the summary process is repeated to get Prefecture (municipal) totals. The Municipalities or Prefectures submit their summaries to the Province where they are reviewed and summarized. A written report is then prepared to be sent to the State Statistical Bureau and to the Ministry to which it pertains. These agencies aggregate these reports for national totals.

Thus, the tabulation responsibilities are divided among six levels. The average number of reports per unit to review and tabulate is thirteen with no level having more than thirty to process. Although each level spends considerable man-hours processing the data, no individual unit must expend unmanageable manhours to complete the comprehensive surveys. This complete decentralization of data collection and processing almost precludes the use of high-speed computers. In fact, any move to automatic data processing could delay the summarization significantly if the processing was centralized either at the Province or State level.

Use of computers for processing comprehensive surveys at either the Province or State level with disaggregated data for each of the six levels would be highly desirable as a management tool. Special computer summaries by Production Team, Brigade, Commune, County, etc., would make it possible to trace progress in agriculture production by the type of area for several years. It would help to identify, compare, and trace teams that are above, below and at the average in production level. This could help identify specific factors associated with successful teams and thus determine common components that contribute to success.



## COMPREHENSIVE SURVEYS

Comprehensive surveys are conducted annually, semi-annually, quarterly and monthly. These surveys not only collect data on what has occurred, but also collect information on future production plans. Appendix C, "1980 China Annual Report on Agriculture and Industrial Production" presents the national summary of the 1980 final comprehensive survey. The State Statistical Bureau (SSB) has statisticians with principal responsibilities for the collection and tabulation of comprehensive surveys at the State, Province, Prefecture and Municipality, and County levels. However, the statistics personnel within the Ministry of Agriculture, assisting the SSB personnel, actually summarize the data. Placing primary responsibility on the SSB statisticians does not appear to cause any particular problems. Each level relies heavily on the results of the comprehensive surveys for its jurisdiction.

Data collected at the Brigade and Commune levels is used in the management of labor, materials, financial resources and income distribution at these levels. At the County, Prefecture, Province and State levels the comprehensive surveys provide information that is used for the allocation of commercial fertilizer, improved seeds, machinery and labor. These reports help all levels in planning and evaluating scientific advancement extensively. It should be emphasized that the comprehensive surveys are used extensively as administrative reports, as well as for providing agricultural statistics. The dual use of comprehensive survey reports explains in part a system that might otherwise appear to be an inefficient means of collecting agricultural statistics.

The Chinese have learned through their experience in 1958 that there is a certain risk involved in relying entirely on comprehensive reports for agricultural statistics. Therefore, since the end of the Cultural Revolution, they have been attempting to reintroduce non-comprehensive surveys to provide an independent check on their comprehensive surveys and to provide more timely information on major crop production. In recent years, the relationship between the comprehensive survey results and secondary information that is obtained from the Ministry of Cereals on surplus grain purchases and from the Ministry of Commerce and Ministry of Cooperatives on cash crops, indicates that at the present time comprehensive surveys seem to be very accurate aggregate totals for the agriculture production from communes and state farms.

During the major planting and harvesting season, production teams, brigades and communes telephone their respective County statistician daily to report information on crop planting, growth and harvest progress. Communes generally post their daily progress reports to aid in management and provide incentive awards to the Production Team that completes its planting or harvest first.

All of the communes and state farms visited by our delegation had full-time statisticians. These statisticians not only were responsible for collecting, summarizing and analyzing data, but also were expected to make recommendations to their commune leaders on action that should be considered in the management of commune affairs. Some communes develop additional reporting forms, which production teams and brigades are also required to complete. Usually the accountant or bookkeeper is responsible for providing the required scheduled statistics reports at the brigade and production



team levels. Training sessions for statisticians are held at the province, prefecture and county levels. The commune statistician will hold periodic training sessions for the brigade and production team personnel responsible for completing the comprehensive survey forms.

The Economic and Statistics team believes the comprehensive surveys provide very important input into the overall agricultural information system. These surveys appear to be detailed and frequent enough to meet most of their administrative needs, but do not provide as frequent or timely statistics as the Central Government would like to have for optimum planning and management of their total agricultural system.

#### NON-COMPREHENSIVE SURVEYS

Much of the non-comprehensive sample survey work was discontinued in 1966 due to the Cultural Revolution. Some sectors have reintroduced non-comprehensive survey work similar to the procedures used prior to 1966. However, some sectors are still not conducting any sample surveys which may be due to lack of interest, resources, or trained staff.

A representative sampling procedure for forecasting rice and wheat production was explained to team 2B in Jiangsu Province. Counties conducting this survey first selected about 8 representative communes according to historic and current conditions. A representative brigade within each selected commune was then selected followed by the selection of 7 to 10 fields planted to each crop by a high, average, and low yielding production team within each selected brigade. Two methods were used to estimate rice and wheat production. Early season forecasts were based on the observation of an experienced team which visited the selected fields. Immediately prior to harvest, the selected fields were re-visited and a plot, 10 Chinese square feet, was harvested and the grain was weighed at the commune laboratory.

A second non-comprehensive survey procedure using "systematic" sampling was also outlined to our delegation in Jiangsu Province. The Counties conducting such surveys would array all brigades in order of average yield and select a 2-3 percent sample. Selected brigades were asked to estimate the current year's total production which was then expressed as a ratio to their previous years' production. The results provided an estimate of the percent increase or decrease expected for the current year's production.

A "point" sampling system was used to obtain family or household data. Household surveys attempt to measure private plot agricultural production and family operated sideline enterprises as well as to provide considerable detail on income, family living expenses, family savings, etc. The Chinese felt that the information collected from families was often inaccurate which caused serious errors in the expanded totals, particularly on income, expenses, and savings. Also, the private plot production was usually less than what was verified for a small check sample. The Chinese indicated concern about their inability to obtain accurate social economic data from individual families, but recognize that families are afraid to re-



port accurately for fear of losing some of their possessions.

- Some sectors report that their non-comprehensive survey is designed to verify their comprehensive surveys. However, our delegation found no adjustment being made in the comprehensive survey data based on the non-comprehensive survey.
- The Chinese indicated their comprehensive surveys generally fell within the confidence limits of the non-comprehensive surveys and they are quite confident they are receiving highly accurate information.

Non-comprehensive surveys are given a low priority at many levels and were non-existent in some areas. Officials with the State Statistical Bureau (SSB) are quite interested in increasing the use of sampling for collecting agricultural statistics. However, the support for this is not very strong from outside SSB and they are continuing to operate with a small number of statisticians and very limited resources compared with years prior to the Cultural Revolution.

#### Comments and Recommendations

##### I. Comprehensive Statistical Surveys

- A. Provide computer processing for the comprehensive surveys at the province level with data transcribing performed at the county level. Eventually the computer processing should be made available at the county and commune level.
- B. Continue manual tabulation of key items until the data transcribing is decentralized to the grass roots.
- C. Summarization routines should be developed to provide greater detail by commodities on technological developments and economic data by individual teams, brigades, communes and various geographical areas.
- D. Pretest under actual data collection conditions, changes in comprehensive reporting forms. The State Statistical Bureau should coordinate and as much as possible standardize the comprehensive survey forms used in all provinces.
- E. Strict deadlines or due dates should be adhered to at all levels to enhance the fast, efficient flow of information from the grass roots to the State Statistical Bureau.
- F. A centrally coordinated verification of reported data by production teams should be developed for all provinces. Totals should be adjusted for any



reporting bias which has statistical significance at the province or national level.

II. Non-comprehensive Surveys

- A. Probability or simple random sampling techniques should replace representative sampling procedures for obtaining crop production forecasts, crop cutting surveys, and verification of comprehensive survey reports.
- B. Increased coordination and training should be provided, by the State Statistical Bureau, in implementing nationwide non-comprehensive surveys.
- C. Area sampling for collecting family or household information would be more efficient than the current point sampling procedure.
- D. Objective yield surveys, using actual field counts and measurements for major crops in place of subjective yield analysis, should be used to improve the quality of pre-harvest production forecasts.
- E. Alternative methods of conducting household income and expenditure surveys are needed to reduce the serious understated bias. For instance, selected respondents may need to be provided special daily recording forms and visited frequently by interviewers in order to increase the accuracy of their reported data.



## Chapter IV

### China's Agricultural Policy, Planning and Management

#### Introduction

Information about policy, planning and management of agriculture production in China was obtained by briefings at the state, province, prefecture, county, commune or state farm and production brigade levels. The team visited the headquarters of a production team but did not receive a direct briefing from the production team leader. In general, there is a vertical structure through which policy guidelines and information flows. Policy is set by the State, then it enters each subordinate level before finally arriving at the production team units. The State also has a fixed set of production quotas that are apportioned to the communes or state farms through the vertical line with the production team being the basic accounting unit. Therefore the statistical and accounting data furnished by production teams is the basic source of most economic data for planning at all levels of government.

The briefings are summarized by the different government levels. At the State level, the information is a statement of current policy in China. Each succeeding lower level provides a more detailed account of the actual management of the production process.

#### State Planning and Management

The briefing officials emphasize that the Cultural Revolution had seriously disrupted agriculture. The Cultural Revolution was characterized as a "left tendency" movement, in which the operational manifestation was an "evenness" concept where everyone received the same regardless of ability or work output. This destroyed the incentives and enthusiasm of the workers. During the Cultural Revolution most agricultural schools ceased to operate, and some schools were even destroyed. This interrupted the influx of trained scientists and technicians, thereby cutting off higher education in the agricultural area. Currently the lack of trained personnel is a problem, because there is not an adequate staff to efficiently operate the total agricultural system.

The Chinese economy is currently undergoing a readjustment to enhance the economic development of 80 percent of the population, which is located in rural areas. Chinese leaders want to mechanize agriculture in order to make it more efficient. This will mean a move toward less labor in agriculture. However, most cities are already overcrowded and additional jobs are not available. To avoid migration from rural to urban areas, Chinese officials have established regulations that prevent most migration to the cities. As an alternative to massive migration, they are developing light industries or factories at the commune and brigade level as well as encouraging expansion of sideline enterprises. The goal is to provide



jobs locally as mechanization frees labor from basic agricultural tasks.

The "responsibility system" was the principle policy the delegation was briefed on in relation to rural development. It is an overall policy adopted to increase individual incentives and to overcome "even" distribution. The intended objective is to fully mobilize the enthusiasm of the peasants, and thereby, to increase the efficiency in agriculture.

There are several major aspects of the "responsibility system":

1. In addition to developing industry on the communes and state farms, individuals or groups of individuals are encouraged to develop sidelines. Sidelines were referred to as farm operations other than grain, such as swine, cattle, poultry, orchards, forestry, aquaculture, bees, handicrafts, silk worms, etc. Industry was defined as manufacturing. The plan calls for a quota of output from the sidelines to go to the commune or state farm, with individuals benefiting from surplus production.
2. Production teams are allocated crop acres with an official production target. They are rewarded by sharing the profit from any production which exceeds the target.
3. Farm machinery may be allocated to certain teams. Work points are awarded to determine an individual worker's share of income according to the quantity of work performed with the machinery.
4. In the remote areas, a policy has just begun where the land will be distributed directly to individual families. Their income will depend on how well they utilize the land. However, the State retains some control over the land.
5. Currently private plots average about 5 to 7 percent of the land in a commune. Under the "responsibility system" the percentage can be increased up to 15 percent. This adjustment will be gradual, and it will depend on local conditions and local decision-making.
6. Production planning relies on input from the grass roots as well as high levels of government. The State sets quotas, which are allocated to the production teams. The production teams, brigades, communes and the state farms provide production planning feedback in an effort to avoid inappropriate allocations.
7. More attention is being paid to increasing the living standards of the peasants. This was indicated as another way to encourage and increase agricultural production.
8. In 1980, grain prices for quota grain was increased 20 percent, and prices for grain above the quota was raised 50 percent.

The anticipated outcome of the "responsibility system" is to increase the enthusiasm of the peasants and thereby increase output and reduce labor requirements. The labor saved can then be utilized by industry or by sideline activities, thus increasing the gross national product. By locating industry on the communes and state farms and by encouraging peasant sidelines, the labor freed from food pro-



duction can remain on the communes or state farms and thus increase productivity.

State officials indicated that cultivated land is limited and significant additional cropland development is not anticipated. More attention will be concentrated on animal husbandry, aquaculture and forestry. Part of the efforts in animal husbandry will be to transform grassland into more productive pastures. This will be difficult because much of this land lies in mountainous areas with low rainfall.

Current forestry plans include planting more trees on slopes and to plant trees with more economic value (i.e. fruit-bearing trees).

The "responsibility system" actually began in the 1950's. At that time the general outline functioned with some success. However, the system was abandoned during the Cultural Revolution. The current "responsibility system" was used first as the guideline policy for the 1979 crops.

#### Provincial Planning and Management

The delegation team was briefed by province officials in Jiangsu and Shandong Provinces. Some 1980 statistics for Jiangsu and Shandong Provinces are included in Appendix B.

Each production team has a quota assigned by the State. Each team submits a plan of costs and outputs usually within the quotas. Targets to exceed the quota, plans for sidelines and other arrangements will be included in the submitted plan.

At the province level, the Department of Agriculture has a Commune Management Division. This division oversees the adoption of the "responsibility system" at the commune level. Current emphasis is placed on increasing yields. If yields exceed the quota, the peasants share in the additional income through collectiveness. Although used less frequently, another method of dividing production that exceeds targeted quotas is where the team receives the excess production which it is free to sell on the open market.

The province officials indicated that there are many variations of the "responsibility system" depending on local circumstances and the operation of individual communes. They also indicated that the "responsibility system" only has been in operation for two years and that there will be a long experimental stage to find out specifics on what will work best.

At the province level it was stressed that the collective ownership embodied in the peoples communes is a social organization that includes: farming, industry and sidelines, forestry, animal husbandry, aquatic production (marine and fresh water), education, research, health care and recreation. This social organization is under the auspices of the Communist Party and the Peoples Government. The party and the State provide the policy guidelines and set the overall quotas and tasks. The provincial government is responsible for implementing policies, quotas



and tasks within the province.

Province officials listed six policies that guide the activities of the rural areas they oversee:

1. "Each according to his ability and to each according to his work". This is to negate the Cultural Revolutionary policy of evenness.
2. The exchange of products and inputs should be on an equal basis and at fair prices.
3. State quotas are set and are not changed for five years. The 1981-1985 period is the sixth five-year plan.
4. The pricing policy should reward exceeding quotas and thus, be an incentive.
5. The collective distribution should consider the interest of the State, collectiveness and individuals. An example given by the province officials was the necessity that collective distribution recognizes the needs of public welfare. There is a tendency to distribute nearly all of the commune returns, rather than building reserves for investments in long-term economic growth.
6. Individuals should be allowed to operate private sidelines and to sell vegetables or meat that they raise in the free marketplace.

In conjunction with these policies and principles, the province officials indicated that the managers at the commune level are allowed five freedoms in fulfilling the State plan:

1. Freedom of production, which means that once their quotas are fulfilled, the commune can utilize the remaining land to produce whatever would be in their best interest.
2. Considerable freedom of production practices within the constraints of available equipment and other inputs.
3. Freedom to distribute collective income at the commune level, within the general guidelines of the higher levels.
4. Freedom of management practices.
5. Freedom to refute bad ideas from higher levels.

The province officials take responsibility to support the communes by providing some services and direct capital investments. These services and investments include:

1. Loans and credit.
2. Capital investment that is beyond the capability of a commune or which is beneficial to a large area. The State may locate an industry in a commune by



providing capital equipment.

3. The State provides support industries that manufacture machinery, chemicals, fertilizer and plastic sheeting, with the goal of increasing commune income and of reducing prices of these manufactured products.

4. The State trains personnel and specialists, and then assigns them to serve in a commune.

5. The State provides scientific and research institutions.

The province officials reported the investigation of a number of the brigade and production teams to gauge the effect of the overall "responsibility system". They found increased production and income where the "responsibility system" was carried out. Their judgement was that the increased production was the result of production teams being able to make suggestions and recommendations. The commune and brigade leaders confirmed that they were able to take suggestions from all levels, providing they were within the boundaries of the established quotas and tasks. It was unclear just how much latitude was available to influence the quota or tasks that were assigned. However, it appeared there was considerably more flexibility than had previously existed at all levels, including the State level.

#### Perfecture Planning and Management

The delegation team was briefed by Soo Chow Prefecture officials. At the prefecture level, the government functions mostly as an administrative body that does not deal with policy or planning. Prefecture officials also receive and summarize county-level data and then pass the information on to the provincial government, serving as a liaison between the provincial and county governments.

#### County Planning and Management

The delegates were briefed by county officials in Wuxiang County in Jiangsu Province and Laoshau County in Shandong Province. Some statistics for Wuxiang County are included in Appendix B.

The county government has three functions in relation to the communes. The county (1) provides administrative leadership over the communes; (2) has the responsibility of aiding the peoples communes in production planning and achieving a balance of economic activities; and (3) the county departments and county speciality companies give advice and instructions, set up experiments and do extension work. The county officials pointed out that the speciality companies may have contracts with the communes to carry out specific tasks.

The county government also undertakes an allocative role over commune production quotas and inputs such as fertilizer and credit. After the communes receive their



production quotas and other tasks, they develop production plans. The commune's plans are then reviewed at the county level. The county may need to hold further discussions with the communes if their plans do not meet county needs or if an adjustment is suggested by the provincial government. The county can also help the commune in approving plans and providing limited credit to expand industry or build new sidelines.

The county officials provide some insight into how the State provides aid to improve agriculture. In 1978, the county received a grant of 3,670,000 Yuan to be apportioned to the communes for water conservation, purchasing of farm machinery, extension work and technology improvement. In 1980, the county had 42,000,000 Yuan of low-interest loan money to apportion to the communes. Loans could be made for one, three or five years. Loans were made on an application basis, with the principal criteria being the ability to repay. The officials reported that brigades and teams received 60 percent of the loans, with communes receiving the remaining 40 percent. This shows that production teams, brigades and communes have different responsibilities and each are held accountable. There are many departments in the county. Without being all inclusive, county officials listed the Department of Agriculture, Vegetables, Forestry, Machinery, Animal Husbandry, Water Conservation and Aquatic Products. The county thus has the same general structure as the provincial government.

#### Commune Planning and Management

The commune is managed by governing bodies at these levels: commune, brigade and production team. At the commune level, the governing body has a chairman, one or more deputy chairmen and supervisory committee members. There will be about 13 members on the commune governing body. At the brigade level, there will be a brigade leader, one or more deputy leaders and supervisory members - all which totals seven or eight people. The production team will have a team leader, one or more deputy leaders and three or four other members, which comprises five to six people.

The ultimate power for setting policies of the commune is the Commune Member Peoples Conference, which is made up of representatives from the brigades and teams. There is also a conference at the brigade level that is made up of representatives of production teams. The production team has all-member conferences. Each conference sends representatives to a higher level conference, so there are conferences at the brigade, commune, county and provincial levels, and also a national conference. At the commune level the important conference items include agricultural production, sideline production, capital construction, product marketing, credit and loans, and income distribution. The conference has the responsibility to lead the production teams. Currently, the conference is in charge of carrying out the "responsibility system" policy guidelines. Two specific goals that the commune cadre cited were to promote modernization and to raise the standard of living of the peasants. This is in addition to ascertaining that the State assigned quotas and tasks are fulfilled.

The production team is the basic accounting unit in terms of keeping track of



costs and returns and reporting production and financial data. The collective income is distributed by and at the production team level. Some production teams had subgroups with duties such as animal husbandry, handicrafts or other services.

Also, some brigades perform specialized functions such as doing construction labor or operating farm machinery for the production teams. Workers in these brigades earn a salary for fulfilling their assigned task, and now under the "responsibility system" would be likely to receive a bonus or reward for work that exceeds their production plan.

Industries are generally operated at the commune level with commune leadership responsible for their operation. Each industry has a manager. The profits from agriculture and industry provide the source for commune funds. These profits are often used for purchasing machinery, developing irrigation, draining land, building new factories and laboratory facilities, plus expanding sideline enterprises. Commune capital is also used to provide health care, schools, research, recreation and in some areas retirement benefits.

Production planning is a critical function for Chinese agriculture. The planning process begins at the State level, where quotas for food grains are set. The State has a policy of providing adequate food. These quotas are distributed down through the system to the production teams. The State and succeeding lower levels of the government also assign tasks such as industrial output, or in the case of Evergreen Peoples Commune that was visited, to provide vegetables to a nearby city.

The individual tasks eventually come down to the production team level. Each level of government develops a plan. The lower levels receive quotas and tasks, then they must develop their own plan and resubmit it to the upper levels. This process filters through all levels from the production team to the State.

After the production team receives its quotas and tasks, it will generally develop a plan based on quota production, assigned tasks and cost limitation. There is considerable flexibility allowed as the quotas and tasks do not specify production and management practices nor do they require all of the available resources. Thus, the production team inserts sidelines into the plan and can specify production practices, perhaps even adopting new practices or rejecting the quotas or tasks. However, in order to totally reject a specific quota they must prove that the conditions are not feasible to perform that task. The governing body of the brigade and commune will review the production team's plans and either accept them or hold further discussions with the team if there is any disagreement.

The production plans are quite detailed, as they must show costs and returns, management of collective properties, fund flows and cultural practices. The plan, which is published and distributed to team members before the spring planting season, provides the basis for monitoring progress as the tasks are fulfilled. The plan also provides basic management practices such as work points under the "responsibility system". This implies practice of the philosophy "each according to his ability and to each according to his work". The incentives and rewards



generate peasant "enthusiasm".

The communes strive for self-sufficiency. They are responsible for the education of children and the care of the elderly. Most communes and state farms have a retirement system where men retire at age 60 and women at age 55. Retirees receive a slightly reduced monthly income, in addition to having access to commune services (i.e. medical services). The communes also report having a welfare fund to take care of special needs. The communes that do not have a retirement system indicated that relatives were responsible for the elderly, and if the member does not have relatives, he would be taken care of through commune welfare funds.

Most communes are self-sufficient in the production of food grains needed to feed their members. The grain is distributed after the summer harvest and counts as payment for part of the members' annual income. After the fall harvest, the net profit of the production team is determined, and the income is distributed according to the production plan using work points or yield bonuses. This distribution is usually in cash. The production team retains some earnings for developing new sideline projects or for purchasing next years inputs or farm machinery.

Some peasants on a commune own their own home and also have private plots where they keep pigs, ducks or chickens and grow crops. The peasants can sell what they produce on their private plots at farmers' markets.

According to Chinese officials, elections are used to select team, brigade and commune representatives for conferences. The delegation was unable to ascertain exactly how elections were held, who was eligible to vote or who was eligible to be elected. However, we did find some situations where the workers were able to elect their leader under what appeared to be a democratic process.

#### State Farm Planning and Management

The state farms are located in areas where the land has limited uses, making the areas impractical or uneconomical for communes. The team visited two state farms. One farm had been reclaimed from a lake, and the other had been reclaimed from a poorly-drained area with high alkalinity. The reclamation often required considerable capital investment and a long adjustment period. The State provides capital and the peasants are paid wages, rather than sharing in the production and profits. Most state farms in the past have lost money, however, the two that the delegation visited reported making profits.

State farms operate sidelines and industries similar to communes. State farms are also assigned quotas and tasks. Wages depend on ability and how hard the peasants work. The welfare system on a state farm is similar to urban areas.

State farms come under the jurisdiction of either the Ministry of Land Reclamation or the Ministry of Agriculture. The Chinese officials indicated the Ministry of Agriculture, and its Department of Agriculture and Forestry at the province level, administered state farms if the state farms were small in number within the particular province. In areas where state farms were fairly significant, they were



under the jurisdiction of the Ministry of Land Reclamation.

The officials of Lian Lake State Farm listed the following five goals for their farm: (1) to increase the efficiency of management; (2) to raise land productivity and yields; (3) to raise the mechanization level; (4) to plant good crop varieties; and (5) to expand into sideline activities such as aquaculture and orchards. The farm cadre believed one important key was to raise the technical level of personnel through more training. For improving crop varieties, the farm had an experiment station conducting agricultural research.

State farms generally report having production brigades which appear to be very similar to production teams in a commune. The state farm did not have two layers of brigade and production teams as do the communes. Each production brigade is given a task. There are speciality sub-groups that work under the production brigade on specific activities.

The state farms reported that the wages of production brigade members were about the same, however, the rewards under the "responsibility system" may be different. As an example, a brigade that planned to make 20,000 Yuan, but that actually made 40,000 Yuan would get to retain 40 percent of the excess earnings, with the balance going to the state farm.

In response to how the tasks were assigned to a production brigade, the farm cadre indicated that task levels were assigned on the basis of five year averages. However, some flexibility exists for making shifts away from trends. One of the state farms had shifted from rice to corn, and the official indicated this was done on the basis of changes in drainage and in soil structure. Furthermore, there was a labor constraint on rice.

The Lian Lake State Farm indicated that the production brigade leader was selected by the management, but that the brigade members did provide input. The manager specifically mentioned using elections in the future. The State had assigned several college graduates to the farm to fill technical positions. The production brigade leadership was reported to have seven to eight positions: Communist branch secretary, team leader, sideline leader, crop technician, animal husbandry technician, accountant (also does statistical work) and a cashier. Brigade and state farm leaders are replaced if they are not successful.

On planning, the May Fourth State Farm described a process which currently appears to be typical among both state farms and communes. First and foremost activities are conducted according to State plan and quotas. After receiving the plans and quotas, there is a planning and discussion meeting on how best to fulfill these. Attention is given to economic efficiency including planting high-yielding varieties. The farms reported that the technicians draft plans and managers review these plans. The point made in the briefings was that the leaders do not merely give orders but also receive input from their workers.



## Comments and Recommendations

### Comment

An important factor in agricultural production is the practice and care used in growing and raising crops and livestock. Consideration needs to be given to the timeliness of operations and the general care given to crops and livestock operations.

All of the crops observed in China were well cared for in terms of being free of weeds. There were no visible evidence of insect damage or disease. Some fields of wheat were suffering from drouth. Without additional observations and actual testing, it is not possible to know if nutrient deficiencies contributed to the drouth like appearance. Irrigated grains, oilseeds and vegetables were all observed to have a vigorous-appearing growth.

Livestock operations were observed much less frequently than crops. However, the hogs, ducks and rabbits observed were being raised under sanitary conditions and appeared to be in good health.

### Recommendations

Team 2B did not have a specific objective of studying agronomy and animal husbandry. The visual observations would indicate that adequate attention was given to providing good conditions for plant and animal production. It would be important that the Chinese provide for soil testing.

### Comment

Another factor is selecting crops appropriate for climate, soil type, slope, rainfall, growing season and availability of inputs and product markets. Visual observations indicated appropriate selection of crops for apparent growing conditions. The redirection policies recognized that input from the "grass roots" is important to prevent inappropriate quotas for crops not suited to specific localities. The team did get indications that cropping adjustments had and were being made at the grass roots in order to select crops according to local conditions.

### Recommendations

Chinese leaders and managers need to continue improving cropping patterns through grass root contacts, experimentation and training for leaders and technicians. Awareness of possibilities for alternative crop selection and a plan-



ning system that is flexible enough to allow these shifts needs to be emphasized in policy and planning at all levels.

#### Comment

The progressiveness of agriculture depends not only on the technology available, but also on whether or not managers, leaders and peasants are aware of what is available and are willing to adopt the available technology.

Chinese agriculture is very labor intensive and one important goal is to increase mechanization. The managers and leaders are quite willing to adopt new methods, however, major obstacles to increase mechanization appear to be availability of machinery, field configuration and increased cost of production.

#### Recommendations

It will be important to balance the availability of mechanized machinery and equipment with the ability to adopt the mechanization and to absorb the labor that is displaced from the farms. Mechanization will have to be selective and the equipment may often have to be specialized, due to the small field configuration and multiple cropping practices.

#### Comment

As an economy develops and moves away from local self-sufficiency, the opportunity for gains from specialization increases. Gains occur from specialization through economics of size, which means that as the size of operation increases the cost-per-unit decreases. The decreases in cost can be attributed to factors such as bigger machines, procurement of inputs in bulk, more specialized management and utilization of machines and other inputs. A developed transportation and communication system is important for specialization.

China lacks sufficient trucks and the rural road system is rudimentary. This would definitely be a detriment to specialization. The team did not have an opportunity to gain much knowledge about the communication system available in the rural areas. Specialization requires communication to coordinate inputs and the allocation of outputs.

#### Recommendations

Chinese policy makers and planners need to recognize the possibilities for specialization and the existence of economies of size. These factors will become increasingly important as the economy develops and as mechanization progresses



in agriculture. Plans need to be formulated so that specialization can be encouraged in the future. It is the team's judgment that there is little opportunity to push specialization at the present time, because of the low level of mechanization, the need for local self-sufficiency and the problems of transportation and communication. Planners should investigate industries best-suited for rural development to assure proper industrial development at the commune and brigade level.

#### Comment

The readjustment policies give production team, brigade, commune and state farm managers much more opportunity to provide input into the planning process. Because of the increased emphasis on sidelines and light industry, these managers will also have to make important decisions in brand new areas. Managers will need technical training in many of these recommended areas, and will need to make economic evaluations. Managers will need financial management training as well as personnel management skills. Marginal economic analysis will be particularly important as planning is encouraged at the grass roots levels.



## Chapter V

### CHINA'S AGRICULTURAL EXTENSION, RESEARCH AND EDUCATION

#### National Program

China's technical extension and agricultural education falls under the jurisdiction of the Ministry of Agriculture.

Seven three-year agricultural colleges are operated by the State (national government), with each province having a college. Every prefecture has one agricultural technical college, and every county has experiment, veterinarian, breeding, and soil and fertility stations; some counties have stations in every commune.

Deputy Director of the Planning Bureau of the Ministry of Agriculture, Ma Jie san estimates that there are 250,000 people working in agricultural research, extension and education. Approximately 70,000 extension people are in farm management and work with the production teams in improving their enterprise section and accounting system. There is a problem with a lack of well-trained, young personnel at the agricultural stations. The problem stems from the Cultural Revolution, when formal education stopped for several years.

Many of the agricultural personnel carry out extension, research and teach only on a part-time basis. Thus, those who work in extension or teaching, also work in research or at demonstration plots. The extension personnel often are referred to as technicians, thus the term "technical extension."

Under the "responsibility system" one plan is to develop contracts between extension stations and production teams. This system will stipulate a bonus for the extension stations if their recommendations are successful. However, if the recommendations fail, the extension station bears some of the responsibility by having to help pay for the loss. While this system is being used on a trial basis, we found no evidence of its implementation. Perhaps it should be noted that in some areas production teams have lost confidence in their extension agents because they recommended cultural practices that were poorly tested and failed to improve yields.

#### Provincial Program

Provincial extension leaders in Jiangsu and Shandong provinces briefed Team 2B on extension, research and teaching at the province level.

Technical agricultural institutes, which are under provincial supervision, contain a curriculum of agronomy, plant protection, soil chemistry, agricultural economics, horticulture, animal science and mulberry culture. Research institutes, which also are run by the province, include the Academy



of Agricultural Sciences, the Forestry Research Institute, the Poultry Research Institute, the Fresh Water Fishery Institute and the Marine Research Institute.

In Jiangsu Province, there are two agricultural educational facilities that are supervised by the Ministry of Agriculture: Nanking Agriculture University and Nanking Forestry and Engineering Institute. In addition, there are two others that are supervised by the province: Chang Sa Agriculture Institute and Sao Chow Silk Culture Technical School.

Shandong Province has two agricultural universities, one cadre school for training leaders and one science academy. Deputy Chief Cui Xuelian says that approximately 3,900 students are enrolled in the four-year programs at the universities. The cadre school is attended by approximately 1,000 students for a one-month course. In Jinan, the capital of Shandong Province, there is an academy of science.

Eleven thousand government-paid workers do crop and livestock extension in Shandong Province. This includes brigade and team extension workers. There are also 12,000 teachers who do extension and research work. In addition, there are 15,000 researchers in Shandong Province.

#### County Program

In Laoshang County, there are technical extension and agricultural educational activities in each of seven county departments. The departmental breakdown is as follows: agriculture, vegetables, forestry, farm mechanics, animal husbandry, water conservation and aquatic products. For the most part, the county staff consists of university and technical school graduates. Of the 229 staff members in Laoshang County, 11 are agronomists, 126 are assistant agronomists and 82 are technicians. Most of the staff has additional tasks besides their extension work.

The basic tasks of extension work at the county level are: (1) to conduct thorough investigations throughout the county and to make suggestions to various communes; (2) to arrange study tours of demonstration plots for the production brigades and teams to see the various methods being utilized; (3) to introduce new varieties of seed through research and demonstration plots--field research results are approved at higher levels before being released to production teams; and (4) to organize workshops for extension technicians in the commune.

Three educational methods are utilized at the county level. Laoshang County has a one-year technical agricultural school in which 350 students were trained during the last three years. A part-time educational committee worked with the county and planned 180 part-time schools for peasants. Night classes, which are one type of part-time educational facility for peasants, commonly are referred to as "popularity school". A third educational method for peasants are seasonal seminars, which are conducted by the



county government. The teachers are generally technicians, middle-school teachers or older more knowledgeable peasants.

### Commune Program

In Jiangsu Province, 90 percent of the peoples communes have agricultural science and research stations. Approximately 80 percent of the production brigades and two-thirds of the production teams in Jiangsu Province have agricultural experiment teams or experimental activities.

The commune extension program has five major tasks: (1) to carry out demonstration work and extension activities at the brigade and team level; (2) to conduct "point experiment work"; (3) to test the nutrient level requirements for plants and recommend fertilization rates; (4) to introduce new seed varieties and to control insect and disease problems; and (5) to train technicians for brigades and teams.

In Feng Chiao Peoples Commune, which has a population of approximately 40,000, all children are required to attend school for nine years. Six years at the primary school level and three years at a middle school constitute the minimal education. However, the opportunity exists for students to receive three additional years of education at the middle school. Only 30 to 40 percent of the population completes a 12-year education. In 1979 only 12 to 15 students, considered "clever", passed the college entrance examination. Most of the middle school teachers have a college education, whereas teachers at the primary level seldom have this background.

At the Feng Chiao Peoples Commune experiment station, which has about 4 hectares and 47 staff members, research plots are randomly selected with three replications. Ten varieties of wheat, rice and barley were being tested in demonstration plots. Also, research was conducted on disease problems including white mildew and scab on wheat and barley. Aphids were the only insect reported to be a problem. In addition to research and extension work, the staff also conducts a one-year technical school that enrolls one member from each of 28 brigades. Only a few college graduates are assigned to the experiment station.

The Cheng Yang Peoples Commune has a research station with about 6.5 hectares and a staff of 40 workers. The staff includes three chief agronomists and six technicians. Five of these researchers have college degrees. Three forms of agricultural education were reported for the commune: agricultural middle school where production brigades send students for one year before they go to work at a research station; seasonal workshops for teaching peasants; and part-time classes in every brigade to train leaders and technicians.



## Production Brigade and Production Team Program

The 34 brigades in Cheng Yang Peoples Commune have a total of 36 hectares devoted to research. Each brigade has its own research group; nine of the brigades have greenhouses for plant breeding and winter crop production; five have chemical laboratories; and three have weather observation stations.

The Xiao Zaichi Brigade which we visited has been operating since 1958, and through the years has made progress in increasing the yields of vegetables and wheat.

At the production team level, one or two technicians are responsible for the introduction and promotion of new crop varieties and technologies. Each production team has a specialized unit of seedsmen and also, a unit with people responsible for plant protection.

## Lian Lake State Farm Program

A branch experiment station is located on this state farm. Of the 57 people stationed at the headquarters, 31 are graduates from a university, college or technical school. Two or three college graduates are added annually to the staff. In addition to research, the staff is responsible for extension work and plot demonstrations.

## Extension Methodology

Extension activities are intermingled with experimental research and technical school teaching. The term "technical extension" is often used when describing this educational process.

Methodology as explained in Shandong Province includes: (1) experimentation and demonstrations at the production team level; (2) distribution of printed materials; (3) conducting workshops for peasants; and (4) releasing quality seeds and new varieties.

Improved livestock breeding for beef-type animals has begun by the importation of Simmental and Hereford cattle. Also, we saw evidence of improved swine breeding by the crossing of native hog breeds with Yorkshire and Berkshire breeds.

County seed stations buy, store and sell seeds to the communes. An interesting term used for their demonstration plots is "bumper harvest field". New seeds are acquired from other counties but are tested locally before being distributed to the communes.



## Comments and Recommendations

- I. Research should continue on optimal fertilizer applications, optimal irrigation use and the interrelationship between fertilizer and water-application rates. Irrigation methods that use gated pipe or open ditch with siphon tubes should be investigated. Sprinkler systems are probably too capital intensive for practical use at this time.
- II. Labor efficiency is much greater on some state farms and communes than on others. As productive off-farm employment opportunities develop, labor-efficient technology from the more-highly mechanized farms should be adopted by those that are less mechanized.
- III. Swine production could become more efficient by the use of more feed grains. Also, improved pastures could bring about increased beef production and affect current production rates significantly.
- IV. The structure of research, demonstrations, technical schools, education and technical extension appears to be working fairly well in the well-developed areas we visited. Additional resources are needed to improve the amount of knowledge at all levels of agricultural production. A closer tie with the universities and academies would be beneficial based on experience in other countries.
- V. The proposed new program under the "responsibility system" of contracts between extension stations and production teams could result in a significant decrease in the adaption of new technology by production teams because the incentive to assume risk is jeopardized.



## APPENDIX A

### Itinerary

Sun, April 26                          Delegation met at Tokyo Airport

Mon, April 27                          One day rest stop in Tokyo  
    Afternoon flight to Beijing (Peking) -- China's Capital  
    Stayed at Fuxing Hotel

Tue, April 28                          A.M. Briefed on trip's itinerary  
    P.M. Briefed by Chinese delegation on China's agriculture  
    Evening Banquet hosted by Ministry of Agriculture

Wed, April 29                          A.M. Tour Summer Palace  
    P.M. Visit Evergreen People Commune  
    Briefed on State Statistical Bureau by M. Wong, Deputy Division Chief

Thu, April 30                          A.M. Tour China's "Great Wall" and Ming Tombs  
    Evening Dinner with William Davis

Fri, May 1                              A.M. Fly to Nanjing in Jiangsu Province  
    Stay in Nanjing Hotel  
    Briefed on Planned Itinerary while in Jiangsu Province  
    P.M. Visit Zoo  
    Evening Attend Chinese Concert

Sat, May 2                              A.M. Briefing by Jiangsu Province Officials on the Provincial Agriculture  
    P.M. Briefed on Statistical Systems and Structure in Province

Sun, May 3                              A.M. U.S. Delegation briefed Provinicial Agriculture Officials on our individual job responsibilities  
    P.M. Visited Bridge across Yangtze River, plus several tombs  
    Evening Banquet hosted by Zhang Zhi Ni

Mon, May 4                              A.M. Train to Zhenjiang City (Chen Kiang City) in Wu Xiang County, Soo Chow Prefecture, Jiangsu Province  
    Briefing on itinerary for travel in Wo Xiang County  
    Stay at Jinshan Hotel, hosted by M. Yin, Vice Chairman of Foreign Affairs  
    P.M. Visit temples and tombs

Tues, May 5                              A.M. Visit Lian Lake State Farm  
    Lunch at Lian Lake State Farm  
    P.M. Visit a factory manufacturing nuts and bolts using



some deaf mutes and blind persons as part of labor force

A.M. Train to Soo Chow (Wu Xiang County)  
P.M. Itinerary briefing  
Stay in Soo Chow Hotel

Visit Geng Chiao Peoples Commune, including commune Silk Factory

A.M. U.S. Delegation provides briefing to Wu Xiang County  
P.M. Visit: Embroidery Institute, Tiger Hill Temple,  
Lingering Garden, Humble Administrators Garden

A.M. Briefings by Soo Chow Prefecture  
P.M. Train to Jinan, Capitol of Shandong Province

A.M. Itinerary briefing  
P.M. Briefing on Provincial Level Agriculture statistics

A.M. Briefing on Commune, State Farms and Technical Extension work by Shandong Province staff in Jinan  
P.M. Tour: Taiming Lake and One Thousand Buddas Mountain  
Evening Banquet with Provincial staff

A.M. U.S. Delegation conduct all day briefing for Shandong Province staff and other Chinese including University and Institute personnel  
P.M. Briefing continued

A.M. Train to Qingdao (Tsingtao)  
Stay at Hui Quan Hotel  
Evening Briefing on itinerary

A.M. Briefing on Laoshang County at County offices  
P.M. Tour: Sea Shell carving factory and Tsingtao Brewery  
Evening Acrobatic Performance

A.M. Briefing on Cheng Yang Peoples Commune  
P.M. Briefing and tour of Gumiao Production Brigade

A.M. Tour: Laoshang Mountains  
P.M. Tour: Peace Temple  
Evening Film on a revolutionary leader

Briefing and Tour of "May Fourth State Farm"

Host arranged sightseeing  
1:30 p.m. Train to Beijing

Arrive Beijing at 5:30 a.m.  
Stay at Peking Friendship Hotel



Wed, May 20

A.M. Briefing to twelve Chinese representing agriculture economists from Peking Agriculture University, Academy of Agriculture Sciences Institute and the Ministry of Agriculture. Two statisticians from the State Statistical Bureau were also part of the twelve participants  
P.M. Sightseeing arranged by host  
Evening return banquet for Chinese, hosted by U.S. delegation

Thu, May 21

A.M. Final briefing with host officials of Chinese Government

Fri, May 22

Depart Beijing



APPENDIX B  
Statistical Tables  
Provinces - 1980

Item:

Province:	Jiangsu	Shandong
Prefectures:	7	9
Municipalities:	11	4
Counties:	64	123
Peoples Communes:	1,885	2,104
Production Brigades:	34,996	78,000
Production Teams:	325,019	398,000
Rural Peasants:	50,850,000	65,000,000
Total Population:	59,380,000	73,000,000
Major Crops:	Rice, wheat, corn, potatoes, sweet potatoes	Wheat, corn, sorghum, millet, paddy rice, soybeans, potatoes, sweet potatoes

Industrial

Crops:	Cotton, rapeseed and silk worms	Cotton, peanuts, tobacco, hemp, sugar beets, sesame, oilseeds, vegetables
Livestock:	Mainly swine	Mainly swine

Peasant Income

Per Capita:		
from collective ownership:	94.6 Yuan	105.2 Yuan
from private sidelines:	55.4 Yuan	44.8 Yuan



Counties - 1980

Item:

County:	Wuxiang	Laoshau
Peoples Communes:	37	13
Production Brigades:	832	409
Production Teams:	8,258	2,630
Total Population:	1,130,000	580,000
Rural Peasants:	1,020,000	---
Households:	283,000	140,000
Agricultural Work Force:	579,000	280,000
Peasant Income Per Capita:		
from collective ownership	N.A.	207 Yuan
from private sidelines	N.A.	60 Yuan
Horsepower (all vehicles & motors)	N.A.	200,000
KWH electricity for agriculture in 1980	N.A.	98,000,000
Major Crops:	N.A.	Wheat, corn and sweet potatoes
Other Products:	N.A.	Pork, poultry, goates milk, eggs, fruit and aquaculture



Peoples Communes

Name:	Evergreen	Fen Chiao	Cheng Yang
Location:			
City	Beijing	Nanking	Jinan
County	—	Wu Xiang	Lao Shan
Province	—	Jiangsu	Shandong
Population:	43,000	40,000	75,000
Households:	11,000	9,980	16,700
Workers:	24,000	23,000	32,000
Agr.: 1/	17,400	17,000	20,000
Ind.: 5,500	—	—	—
Const.: 1,100	—	—	—
Production Brigades:	—	28 agr. 1 fish 1 seed	34 total (16 vegetable, 16 mixed, 2 grain)
Production Teams:	—	307	249
Factories:	10	N.A.	12
Land:	40,000 mu	15,900 mu	46,700 mu
Percent Irrigated:	98%	100%	77%
Crops:			
Yield	Rice	N.A.	1,041 jin/mu <sup>2/</sup>
	Wheat	N.A.	N.A.
Area planted			
	grain	9,000 mu	28,000 mu
	Veg.	25,000 mu	15,600 mu
	Orchard	6,000 mu	—
Livestock:			
	Swine 3/	18,800	—
	Ducks 3/	60,000	—
	Chickens 3/	14,000	—
	Dairy Cows	100	—
Power & Equipment			
Horsepower:	—	19,584 (.6/mu)	28,000 (.6/mu)
Trucks:	180	17	40
Tractors:	70	6	176
Hand Tractors:	200	222	232
Combines:	8	(69 cutters)	—
Draft Animals:	700	—	—
Horse Carts:	400	—	—
Income			
Per Capita:	480 ¥	230 ¥, plus sideline	232 &, plus 160 jin (commodity)
Per Worker:	961 ¥	—	—
Range:	641-1,300 ¥	—	—

1. Team estimate

2/ Grain Equivalent: 5 jin/mu (sweet potatoe)= 1 jin/mu(grain)

3/ 1980 Production



### Production Brigades

Name:	Gumiao	No Name Given
Date:	May 15, 1981	May 15, 1981
Location:	Cheng Yang Peoples Commune	Cheng Yang Peoples Commune
County	Lao Shan	Lao Shan
Province	Shandong	Shandong
Population:	2,987	3,532
Households:	680	715
Labor Force:	1,521	—
Production Teams:	6	8
Land:	1,791 mu (95% irrigated)	2,606 mu (1 well/25 mu)
Percent in		
Vegetable:	66	60
Wheat Yield:	874 jin/mu	800 jin/mu
Corn Yield:	—	879 jin/mu
Production of Grain Equivalent:	1,728 jin/mu	1,612 jin/mu
Income:	304 Y/capita plus 80 Y in kind	225 Y/capita plus 160 jin of food ration
Power & Equipment		
Horsepower:	—	1,982
Tractors:	—	8 large, 17 medium
Trucks:	—	3

#### Other Facts:

13,400,000 jin of vegetables sold  
 2,500,000 Y in brigade accumulation fund  
 200,000 jin in grain reserve  
 200,000 Y peasant savings deposit



State Farms

Name:	Lian Lake	May Fourth
Date:	Tuesday, May 5, 1981	Sunday, May 17, 1981
Location:	Jiangsu Province	Shandong Province
Population:	7,785	420
Workers:	4,072	—
Agr.:	1,795	147
Ind.:	1,133	—
Factories:	5	—
Land:	15,900 mu (Double Crop) Irrigated	4,242 mu (3,694 in grain) Yields (jin/ju): Single Double Wheat 500 — Corn 800 400 Soybean 300 160
	Wheat: 588 jin/mu Rice: 1,040 jin/mu Total: 1,628 jin/mu	Wheat: 3,200 mu Corn: 1,300 mu Soybean: 700 mu
Livestock:	10,000 sold (swine)	676 swine (inventory) 259 rabbits (wool industry)
Power & Equipment		
Trucks:	—	3
Tractors:	18 med. size 64 hand	13 wheel & crawlers
Combines:	6	4
Draft Animals:	200 buffalo	14 mules & horses
Hp/mu:	33	N.A.
Income Distribution		
Wage:	671 ¥/yr.	600 ¥ worker (850 ¥ technician)
Bonus or Ration:		106 Y (range=70-136)
Retirement & Benefits:		
Age:	60 men - 50 women	55 men - 50 women
Pay:	Yes	60-95% of wage



1/  
1980 China Annual Report on Agriculture and Industrial Production

In 1980 many parts of the country suffered from natural calamities seldom seen in many years. However, the correct policies of the party and the government were carried out, which triggered the enthusiasm of rural cadres and peasants for farm production so that most areas achieved fairly good harvests except for a few including Hubei and Hebei, which had considerable decreases in grain output. The total value of agricultural output, counted at the constant prices in 1970, was 162,700 million yuan, 3.3 percent above plan and 2.7 percent more than in 1979. Except for cereals, targets were met or surpassed for all seven other major agricultural products -- cotton, oil-bearing crops, sugarcane, sugar beet, jute and ambarry hemp, silkworm cocoons, and tea. The diversified economy of the rural communes and their subdivisions and household sideline production grew fairly quickly.

Output of Major Farm Products

<u>Product</u>	<u>1980 Output</u>	<u>Percentage Increase/decrease over 1979</u>
Grain of which:	318,220,000 tons	-4.2
Paddy	139,255,000 tons	-3.1
Wheat	54,155,000 tons	-13.7
Tubers (counted on the basis that 5 kilorgams of tubers is equivalent to one kilogram of grain)	27,845,000 tons	-2.2
Soybeans	7,880,000 tons	5.6
Cotton	2,707,000 tons	22.7
Oil-bearing crops of which:	7,691,000 tons	19.5
Peanut	3,600,000 tons	27.6
Rapeseed	2,384,000 tons	-0.7
Sesame	259,000 tons	-37.9
Sugarcane	22,807,000 tons	6.0
Beetroot	6,305,000 tons	103.0
Jute, ambarry hemp	1,098,000 tons	0.8
Silkworm cocoons	326,000 tons	20.3
Tea	304,000 tons	9.7

1/ Communiqué provided by the U.S. Embassy in Beijing



Some 4,552,000 hectares of land in China were afforested in 1980, 1.4 percent more than in 1979. Output of some forest products increased sharply; that of rubber was 4.3 percent higher than in 1979, walnuts 31.7 percent higher, and chestnuts 41.8 percent higher. Output of raw lacquer and tea-oil seeds was less than in 1979. Trees were felled at random in many areas.

Output of major animal products increased in 1980. Except for hogs, animals in stock at the end of the year grew in number.

Output of Major Animal Products  
and the Number of Livestock

<u>Product</u>	<u>1980 Output</u>	<u>Percentage Increase/decrease over 1979</u>
Pork, beef and mutton	12,055,000 tons	13.5
Of which:		
Pork	11,341,000 tons	13.3
Beef	269,000 tons	17.0
Mutton	445,000 tons	17.1
Milk	1,141,000 tons	6.6
Sheep wool	176,000 tons	15.0
Hogs slaughtered	198,607,000 head	5.8
Hogs (by the end of the year)	305,431,000 head	-4.5
Large animals (by the end of the year)	95,246,000 head	0.7
Sheep and goats (by the end of the year)	187,311,000 head	2.3



Output of aquatic products was 4,497,000 tons, 4.5 percent over the previous year. Output of freshwater products increased 11.1 percent, and marine products 2.1 percent.

State Farms achieved all-round growth in production. In 1980, grain output by State Farms under the Ministry of State Farms and Land Reclamation was 4.7 percent higher than in 1979, cotton 11.2 percent higher, oil-bearing crops 4.1 percent higher, sugarcane and sugar beet 28.6 percent higher, and milk 8.7 percent higher. The total accounts of all State Farms under the Ministry showed a 52.7 percent increase in profits, but 40 percent of the farms still suffered losses of varying degrees.

Attention was paid during the year to the development of farm machinery suited to local conditions. By the end of the year, China had 745,000 large and medium-sized tractors, 78,000 more than in 1979; 1,874,000 small and hand tractors, 203,000 more than in 1979; power-driven drainage and irrigation equipment for rural use with a total of 74,645,000 horsepower, an increase of 3,425,000 horsepower; and 135,000 farm trucks, 38,000 more than in 1979. Tractor-ploughed farmland came to 40,991,000 hectares, accounting for 41.3 percent of all farmland. A total of 12,694,000 tons of chemical fertilizer were applied, averaging 127.8 kilograms per hectare, a 17 percent increase over 1979. Total electricity used in the rural areas came to 32,100 million kilowatt-hours, 13.5 percent more than in 1979.

By the end of 1980, China had 86,000 reservoirs of all sizes and 2.09 million diesel and electric pump wells. Improved management of water conservancy facilities helped raise resistance to drought and ability to drain off excessive water.

The meteorological departments last year improved their service, giving prompt forecasts and warnings for droughts, waterlogging, typhoons and frost, thus raising the effectiveness of the struggles against these natural calamities.



Output of Major Industrial Products

<u>Product</u>	<u>1980 Output</u>	<u>Percentage Increase/Decrease Over 1979</u>
Timber	53.59 million cubic meters	-1.5
Chemical Fertilizer	12.32 million tons	15.7
Of Which:		
Nitrogenous Fertilizer	9.99 million tons	13.3
Phosphate	2.31 million tons	26.9
Potash Fertilizer	20,000 tons	25.0
Chemical Insecticide	537,000 tons	0
Tractors	98,000	-22.2
Hand Tractors	218,000	-31.4
Silk	35,400 tons	19.4



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